Day 211	A Tier 10-a-day
1 A mechanic charges £25 plus £60 for each hour of work. (a) Write a formula for the total cost, £C, after t hours. (b) Dan pays £805 in total. Work out the number of hours.	
2 A semicircle has diameter 12 cm. Work out, in terms of π, (a) the perimeter of the semicircle, (b) the area of the semicircle.	
3 The probability that Tara hits the target is 0.3. The probability that Lena hits the target is 0.3. The two events are independent. Work out the probability that both Tara and Lena hit the target.	
4 Solve $2x^2 - 3x - 2 = 0$	
5 The population of a town is 14,000 and increases by 2% per year. (Calculator) Work out the population after 4 years. Give your answer to the nearest whole number.	

Day 211 **A Tier 10-a-day**

6 The table shows the masses, in kg, of 50 parcels.
(a) Write down the class that contains the median.
(b) Work out an estimate for the mean.

Mass, m (kg)	Frequency
$50 < m \leq 70$	17
$70 < m \leq 90$	6
$90 < m \leq 110$	2
$110 < m \leq 130$	8
$130 < m \leq 150$	17

7 Write $0.5\dot{7}\dot{5}$ as a fraction in its simplest form.

8 A club has 280 members in junior, 280 in intermediate and 240 in senior.
A stratified sample of 40 members is to be taken.
Work out how many members should be chosen from intermediate.

9 Solve $\frac{6}{(x-1)} + \frac{1}{(x-5)} = 1$

10 Triangle PQR has vertices P(7, −2), Q(5, 0), R(−1, 0).
The triangle is enlarged with scale factor $\frac{1}{2}$ and centre (3, −2).
Write down the coordinates of the vertices of the image.